

The genus *Floresorchestia* (Amphipoda: Talitridae) in tropical Australia

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ABSTRACT

The widespread Indo-West Pacific and Caribbean talitrid genus *Floresorchestia* is reported from Australia for the first time and a new species, *F. australis*, is described. *Floresorchestia australis* is known from pebble beaches in Darwin Harbour, Northern Territory, Australia.

KEYWORDS: Crustacea, Amphipoda, Talitridae, Australia, taxonomy, new species, *Floresorchestia australis*.

INTRODUCTION

Lowry and Springthorpe (2009a) recently described *Talorchestia brucei* from sandy beaches in Darwin, Northern Territory, Australia. A second talitrid species, living on pebble beaches also in Darwin, has since come to our attention. It is described here as *Floresorchestia australis*. This is the first record of the widespread Indo-west Pacific and Caribbean genus *Floresorchestia* Bousfield in Australia.

There are now five tropical talitrid genera known from Australia: *Chelorchestia* Bousfield, 1984 (see Serejo 2009); *Chroestia* Marsden and Fenwick, 1984; *Floresorchestia* Bousfield, 1984; *Microrchestia* Bousfield, 1984 (see Serejo 2009; Lowry and Peart In press); and *Talorchestia* Dana, 1852 (see Serejo 2009). *Chelorchestia* has five species distributed between north-eastern Australia, the eastern Pacific and the Caribbean Sea. *Microrchestia* (five species) appears to be a Papua New Guinea and tropical-warm temperate eastern Australian endemic genus. *Chroestia* (monotypic) appears to be endemic to tropical-warm temperate eastern Australia. *Talorchestia* (eight species, *sensu stricto*) is a widespread Indo-west Pacific tropical endemic genus. *Floresorchestia* (15 species) is also widespread on Indo-west Pacific tropical islands, but like *Chelorchestia* it also occurs in the tropical Caribbean Sea.

Bousfield (1984) recognised *Floresorchestia* for a group of described species with unique stridulating organs on the epimera. Recently Miyamoto and Morino (2008) and Lowry and Springthorpe (2009b) have both discussed the morphology of the genus, refining characters and describing additional new species. In this paper we report the genus from Australia for the first time and describe a new species, *F. australis*, from Darwin, Northern Territory, Australia.

MATERIAL AND METHODS

The description was generated from a DELTA (Dallwitz 2005) database to world talitrid genera and species. Material is lodged in the Museum and Art Gallery of the Northern Territory (NTM; formerly Northern Territory Museum), Darwin and the Australian Museum (AM), Sydney. The following abbreviations are used on the plates: C, coxa; EP, epimeron; G, gnathopod; MD, mandible; MP, maxilliped; OOST, oostegite; P, pereopod; T, telson; U, uropod; OR, outer ramus.

SYSTEMATICS

Family Talitridae

Floresorchestia Bousfield, 1984

Gender feminine. Type species, by original designation, *Orchestia floresiana* Weber, 1892. Recent, Flores Island, Indonesia.

Remarks. For the most recent diagnosis of the genus and a complete list of species see Lowry and Springthorpe (2009b).

Floresorchestia australis sp. nov.

(Figs 1–4)

Type material. HOLOTYPE – NTM Cr.16878, male, 8.5 mm, near the boat ramp, Nightcliff, Darwin, Northern Territory, Australia (12°22.759' S 130°50.487' E). PARATYPES – NTM Cr.16879, ovigerous female, 9.16 mm; NTM Cr.13149, male, 9.16 mm; NTM Cr.13149, male, 7.4 mm; NTM Cr.16882, 5 males, 4 females; AM. P.80701, 1 male, 1 female, same locality.

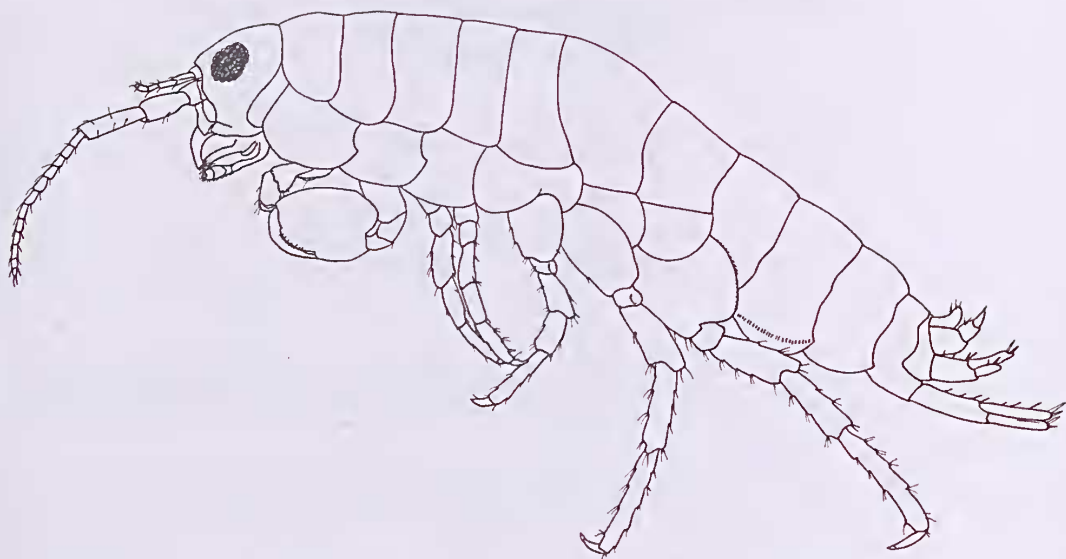


Fig 1. *Floresorchestia australis* sp. nov., paratype, male (NTM Cr.16881).

Type locality. Near the boat ramp, Nightcliff, Darwin, Northern Territory, Australia (12°22.759'S 130°50.487'E).

Etymology. Named for the country to signal the presence of this wide ranging genus in Australia.

Description. Based on holotype, male, 8.5 mm, NTM Cr.16878.

Head. Eye large (greater than 1/3 head length). Antenna 1 short, rarely longer than article 4 of antenna 2 peduncle. Antenna 2 peduncular articles narrow; article 5 longer than article 4. Mandible left lacinia mobilis 4-dentate. Maxilliped palp article 2 distomedial lobe well developed, 4 reduced, button-shaped.

Pereon. Gnathopod 1; subchelate; smaller than coxa 2; posterior margin of merus, carpus and propodus each with lobe covered in palmate setae; propodus 'subtriangular' with well developed posterodistal lobe, anterior margin with 2 groups of robust setae, lateral surface with 3 cuspidate setae, posterolateral surface with 4 serrate setae, medial surface without cuspidate setae, with 5 or 6 serrate setae, posterior margin without cuspidate or serrate setae; palm transverse, with about 7 serrate setae; dactylus slightly longer than palm. Gnathopod 2 sexually dimorphic; subchelate; basis slightly expanded; ischium with anterodistal cradle; posterior margin of merus, carpus and propodus each without lobe covered in palmate setae; propodus subovate, 1.5 times as long as wide; palm extremely acute, reaching less than 60% along posterior margin, smooth, lined with robust setae; posteromedial surface of propodus with groove; with cuticular patch at corner of palm; dactylus longer than palm, attenuated distally; gill simple, not incised. Pereopods 2–4 coxae wider than deep. Pereopods 3–7 cuspidactylate; dactyli with distal patch of many rows of tiny denticles on anterior margin. Pereopod 4 dactylus

thickened proximally with notch midway along posterior margin. Pereopod 5 propodus distinctly longer than carpus. Pereopods 6–7 longer than pereopods 3–5. Pereopod 6 not sexually dimorphic; carpus not expanded. Pereopod 7 not sexually dimorphic; basis lateral sulcus absent, posterior margin with distinct minute serrations, each with 1 small seta, posterodistal lobe present, shallow, broadly rounded; distal articles (merus and carpus) slender; merus posterior margin evenly rounded.

Pleon. Pleopods all well developed. Pleopod 1 peduncle with marginal slender and robust setae; biramous, outer ramus subequal in length to peduncle, with 8 articles. Pleopod 2 and 3 biramous. Epimera 2 subequal in length to epimeron, 3 with stridulating organ just above ventral margins, with 31 ridges. Epimeron 3 posterior margin smooth, with minute setae, posteroventral corner with small subacute tooth, ventral margin without robust setae. Uropod 1 not sexually dimorphic, peduncle with 11 robust setae, peduncle distolateral robust seta present, small (less than 1/4 length of outer ramus), with simple tip, without apical spear-shaped setae; inner ramus subequal in length to outer ramus, with 4 marginal robust setae; outer ramus with 1 long midmedial seta, 1 robust seta on margins. Uropod 2 not sexually dimorphic; peduncle with 6 robust setae; inner ramus subequal in length to outer ramus; outer ramus with 1–2 marginal robust setae. Uropod 3 peduncle with 2 robust setae; ramus subequal in length to peduncle, linear (narrowing), with 2 marginal robust setae, ramus with 4–5 apical setae. Telson about as broad as long, completely incised, partially coalesced, dorsal midline entire, with marginal and apical robust setae, with 5 robust setae per lobe.

Female (sexually dimorphic characters). Based on ovigerous female, 9.16 mm, NTM Cr.16879. Gnathopod

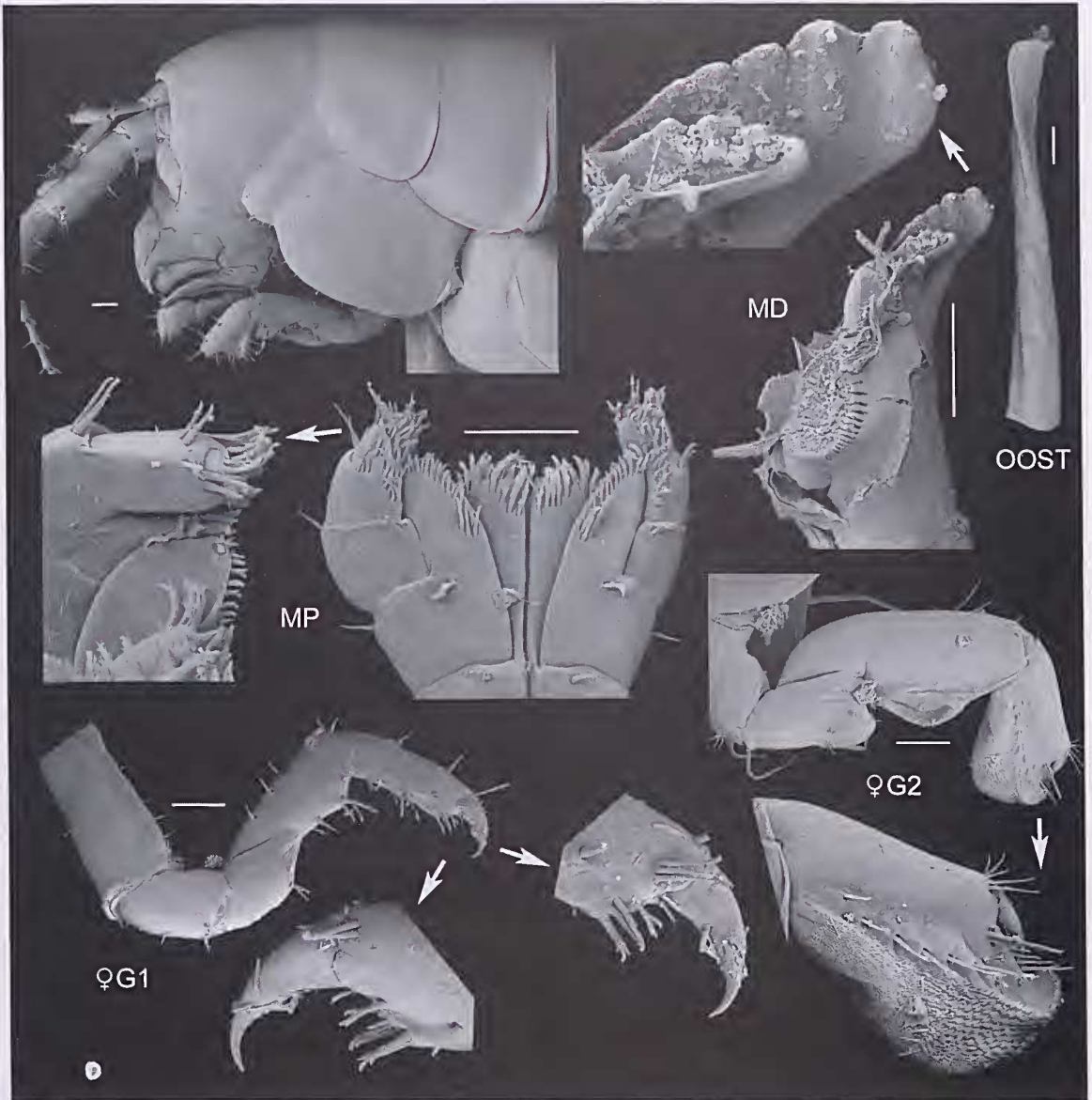


Fig 2. *Floresorchestia australis* sp. nov., holotype, male (NTM Cr.16878), head, paratype, male "b", (NTM Cr.16880), paratype, female (NTM Cr.16879). Scale bars represent 0.1 mm, except oostegite tip represents 0.01 mm.

1 posterior margin of merus, carpus and propodus each without lobe covered in palmate setae; propodus subrectangular; palm acute; dactylus subequal in length to palm. Gnathopod 2 mitten-shaped; coxal gill lobate; basis expanded proximally; ischium without posterodistal lobe on medial surface; posterior margin of merus, carpus and propodus each with lobe covered in palmate setae; carpus well developed (not enclosed by merus and propodus), posterior lobe present, projecting between merus and propodus; palm obtuse, not lined with robust setae, without cuticular patch at corner of palm; dactylus subequal in length to palm. Oostegites setae with spatulate tips. Uropod 1 outer ramus without robust setae.

Habitat. Apparently living on a pebble beach in the supralittoral zone and on the cliff face behind the beach.

Remarks. Only three species of *Floresorchestia* (i.e., *F. australis* from tropical northern Australia, *F. monospina* (Stephensen, 1935) from the Marquesas Islands, and *F. pectenispina* (Bousfield, 1970) from the Solomon Islands) have a large, modified, robust seta on the outer ramus of male uropod 1. Of these species, *F. monospina* has a row of stridulating ridges on epimera 2 and 3 similar to other species in the genus, but *F. australis* and *F. pectenispina* have the stridulating ridges located only on epimeron 2. We think that both of these characters



Fig 3. *Floresorchestia australis* sp. nov., holotype, male (NTM Cr.16878). Scale bars represent 0.2 mm.

(the modified robust seta and the stridulating ridges) are powerful synapomorphies indicating sister species status. *Floresorchestia australis* and *F. pectenispina* differ from each other in the shape and structure of the male gnathopod

2, in the setation of uropod 3 and in the depth of the telson cleft.

Distribution. Australia. Northern Territory: Darwin (this study).

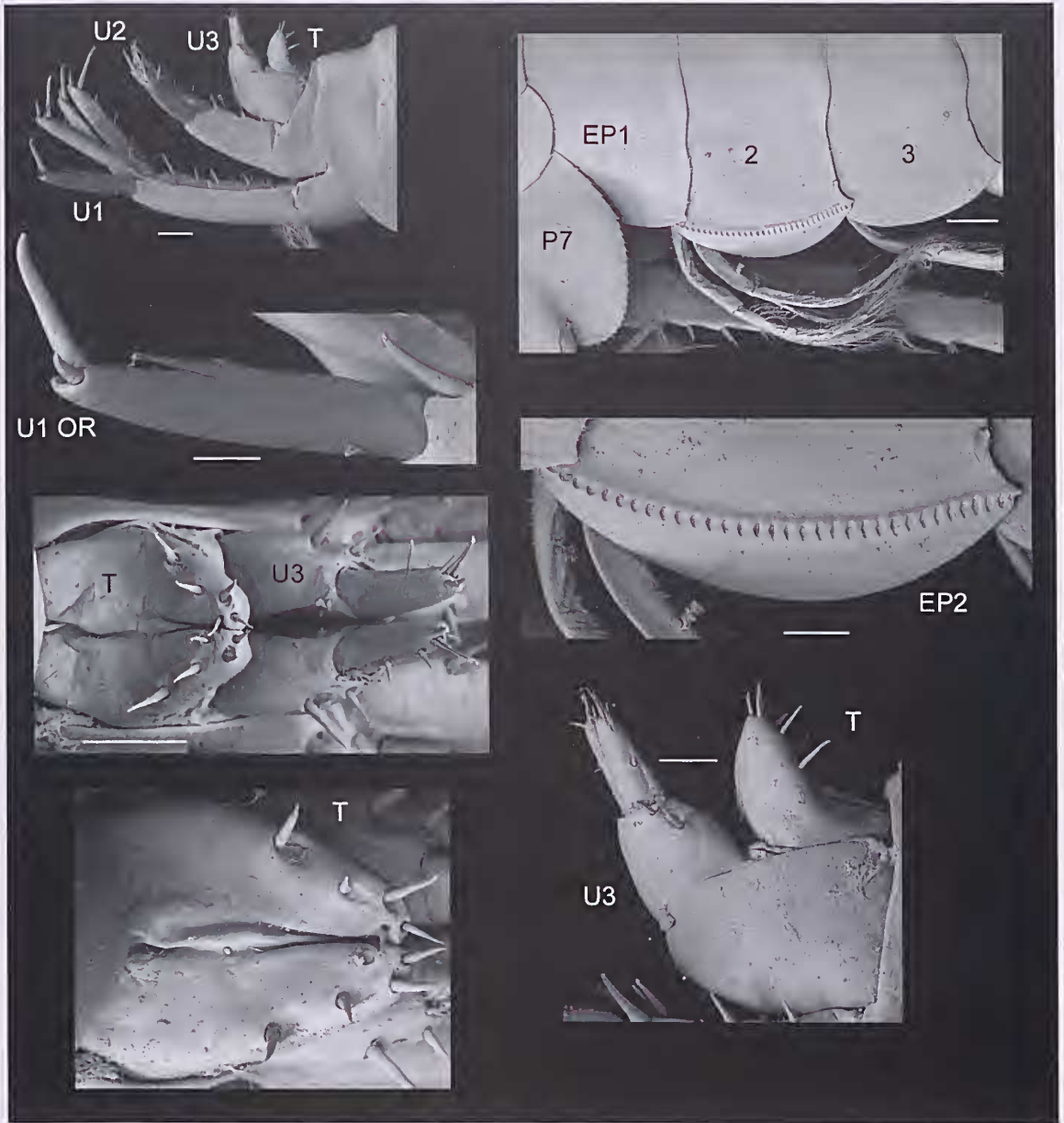


Fig 4. *Floresorchestia australis* sp. nov., paratype, male (NTM Cr.16880). Scale bars for UR, Epimera 1–3 represent 0.2 mm, remainder represent 0.1 mm.

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